

WHAT IS CLAIMED IS:

1. A valve system for a burn-in oven having a burn-in-board including a plurality of integrated circuits being tested under heated conditions, a tray positioned above the burn-in-board to form a heat exchange chamber overlying the burn-in-board, and a first plenum chamber formed above the tray for receiving cooling air, the improvement comprising an individual opening in the tray overlying each of the integrated circuits on the burn-in-board, and an individually controlled valve controlling flow through each individual opening from the first plenum chamber above the tray to the heat exchange chamber, the valve controlled opening forming a path for air flow from the first plenum chamber to the heat exchange chamber.

2. The valve system of claim 1, wherein said valve comprises a valve having a through opening and a valving element for controlling flow through the through opening.

3. The valve system of claim 2, wherein said valve comprises a body rotatable about a longitudinal axis, and having a body opening transverse to the longitudinal axis, a housing for receiving the body, the housing having at least a part cylindrical surface sealing against a part cylindrical surface of

the body, and the through opening being in the housing and aligning with the body opening in a selected rotational position, and the body controlling reducing the through opening size upon rotation of the body to control flow of air through the valve.

4. The valve system of claim 2, wherein there is a separate electric motor connected to each valving element, and a controller to control a position of the valving element.

5. The valve system of claim 4 and a controller for each of the integrated circuits including a temperature of the integrated circuit to provide a temperature signal, the controller controlling the position of the valving element as a function of the temperature signal relative to a reference temperature signal.

6. An air flow control plenum assembly for controlling air flow onto heated devices under test, a valve tray overlying the devices under test, a wall supported above the valve tray and having side walls along sides of the valve tray to form a plenum chamber enclosed except for an inlet, a plurality of outlet openings through the valve tray, a separate controllable valve for each outlet opening controlling a flow of air from a source of cooling

air provided at the inlet of the plenum chamber to an opposite side of the valve tray, whereby a flow of cooling air is selectively provided through each outlet opening by controlling the position of a valve element in associated controllable valve.

7. The air flow control plenum of claim 6, including a controller for controlling the position of each valve element in response to a selected parameter.

8. The air flow control plenum of claim 6, wherein the controller adjusts valve element position as a function of a temperature signal indicating the temperature of the device under test.

9. The air flow control plenum of claim 6, wherein the valve element in each valve is a rotary valve element, and a separate motor driving the respective rotary valve element to control the position of the rotary valve element to adjust flow through the respective outlet.

10. The air flow control plenum of claim 6, wherein said source of cooling air comprises a second cool air supply chamber at the one end of an oven supporting the air flow control plenum.

11. The air flow control plenum of claim 6, used in combination with a series of vertically stacked air flow control plenums of claim 6 in an oven chamber, each valve tray carrying an associated plenum chamber overlying a burn-in-board having devices under test.

12. In combination, a burn-in oven, and a plurality of first and second trays in the oven, combined with a cooling air flow source, the burn-in oven defining a compartment, a plurality of first trays forming burn-in-boards having devices under test mounted thereon in a preselected array; a plurality of second trays comprising valve trays spaced from each of the burn-in-board trays on a side of each burn-in-board tray so that the valve trays overlie the devices under test and form a laterally extending space between such trays; a cooling air plenum on a side of each valve tray enclosed by a wall and spaced from the respective valve tray, each valve tray having openings overlying each underlying device under test on an associated burn-in-board; and a separate valve controlling flow through each valve tray opening from the cooling air plenum.

13. The combination of claim 12, wherein said devices under test comprise holders supporting an integrated circuit under test, a heat sink on the holder, said heat sink extending into the space

between each burn-in-board tray and its associated overlying valve tray.

14. The combination of claim 12, wherein said burn-in oven has a blower for providing a flow of cooling air to the cooling air plenums, and a flow passageway carrying air from said blower to an inlet end of each cooling air plenum to provide cooling air to each of the cooling air plenums.

15. The combination claim 12 further including an air exhaust opening at an end of each space between a valve tray and an underlying burn-in-board tray, the exhaust opening being on an opposite side of the burn-in oven from the inlet ends of the cooling air plenums.

16. The combination of claim 12, wherein the wall forming the cooling air plenum is connected to the respective valve tray and moves with the valve tray.

17. The combination of claim 16, wherein each of the walls is connected to the respective valve tray by side walls extending between the respective wall and valve tray to form a valve tray assembly.

18. The combination of claim 17, wherein the side walls are spaced at a portion of a valve tray assembly to form an air inlet.

19. A flow control valve for use in a burn-in-oven to control air flow through an opening in a wall, which opening is aligned with a heated device under test, comprising a valve body having an inlet and an outlet aligned with the opening in the wall, and a rotary valve element movable to open and close the outlet.